



COUNTY OF LOS ANGELES DEPARTMENT OF HEALTH SERVICES
IMMUNIZATION PROGRAM
2003-2004 INFLUENZA CAMPAIGN REPORT
JULY 2004

Background

During the winter months of 1990-1999, influenza caused an average of 36,000 deaths in the United States each year.¹ During influenza epidemics there is a twofold to fivefold increase in hospitalization rates in the elderly and persons with chronic medical conditions.² To lessen the impact of influenza, the Advisory Committee on Immunization Practices (ACIP) recommends that persons at risk for complications due to influenza be vaccinated each year.¹ The California Health and Safety Code Section 104900 mandates that publicly funded vaccine be made available to these high-risk persons, with priority given to healthy persons 60 years of age and older.

Vaccination Recommendations for the 2003-2004 Influenza Season

- ACIP recommendations¹
 - Adults aged 50 years and older.
 - Residents of nursing homes and other chronic care facilities.
 - All persons with chronic health conditions (e.g. cardiovascular disease, asthma, pulmonary disease).
 - All persons who required regular medical follow-up or hospitalization during the preceding year because of chronic metabolic diseases, renal dysfunction, hemoglobinopathies, or immunosuppression.
 - Children and adolescents receiving long-term aspirin therapy.
 - Pregnant women in their second or third trimester.
- Los Angeles County (LAC) Department of Health Services (DHS) recommendations
 - All LAC-DHS recommendations for the 2003-2004 Influenza Campaign were the same as ACIP recommendations.

Influenza Campaign

- Publicly funded influenza vaccine from the California Department of Health Services is distributed by the Los Angeles County Immunization Program (LACIP) to public clinics, community and free clinics, skilled nursing facilities, and private providers who agree to hold public clinics. All other healthcare providers must purchase vaccine directly from the vaccine manufacturer for their patients and these data are not available.
- Participating healthcare providers immunize high-risk persons either in their clinic or during outreach programs (i.e., non-healthcare settings).
- Vaccine availability, the number of high-risk patients served by the provider, and the number of doses of vaccine used by the provider in previous years determine the amount of influenza vaccine each healthcare provider receives from LACIP.

Methods

Collected Data

- Vaccine accountability forms are distributed to each healthcare provider administering publicly funded vaccine in order to collect the following information:
 - Healthcare provider name and locating information.
 - Whether vaccine was administered at the in-house clinic or as an outreach activity.
 - Date of vaccine administration.
 - Age and ethnicity of vaccine recipient for every dose administered.
- Accountability forms have the healthcare provider's name pre-printed on them before distribution.
- Accountability forms are submitted weekly by in-house clinics; outreach clinics submit accountability forms at the conclusion of the clinic.

Exclusion criteria

- The 2003-2004 Influenza Campaign began October 18, 2002. Providers continued to administer the influenza vaccine until the supply was depleted or the vaccine expired.
- Data for this report were collected through June 18, 2004.
- Accountability forms submitted by providers not originally identified as vaccine recipients were excluded.

Data Analysis

- Number of doses administered at the influenza clinics, by race/ethnicity and age of the recipients.
- Number of doses administered by type of provider: Community Health Provider (community and free clinics and other private providers who agree to hold public vaccine clinics), DHS-Personal Health Center, DHS-Public Health Center, and Skilled Nursing Facility.
- Number of doses administered in each Service Planning Area (SPA).

Results

The results are grouped into three categories:

- I. Vaccine Administration – Overall Summary & Trends by Provider Type.
- II. Vaccine Administration – Demographic Stratified Summary & Trends.
- III. 2003-2004 Influenza Campaign Results

I. Vaccine Administration – Overall Summary & Trends by Provider Type.

Table 1. Influenza Vaccine Doses Administered, by Provider Type, Los Angeles County, 2000-2003 Influenza Campaigns.

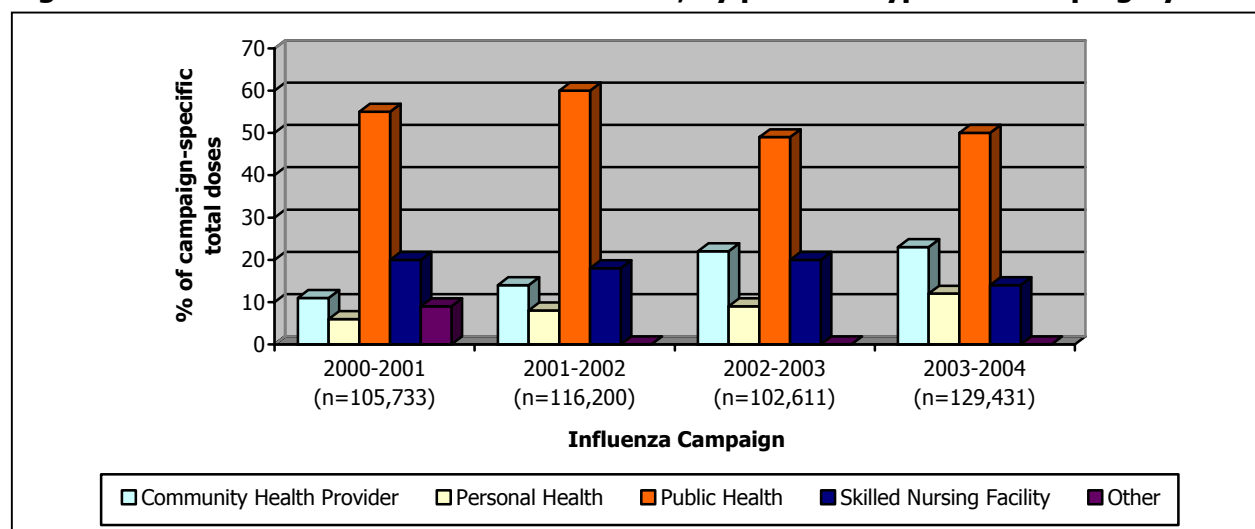
Provider Type	Influenza Campaign Years							
	2000-2001		2001-2002		2002-2003		2003-2004	
	n	(%)	n	(%)	n	(%)	n	(%)
Community Health Provider	12,040	(11.4)	16,049	(13.8)	22,698	(22.1)	30,331	(23.4)
DHS-Personal Health Center	5,944	(5.6)	8,974	(7.7)	9,480	(9.2)	15,555	(12.0)
DHS-Public Health Center [^]	57,860	(54.7)	70,019	(60.3)	49,806	(48.5)	65,260	(50.4)
Skilled Nursing Facility	20,626	(19.5)	20,958	(18.0)	20,627	(20.1)	18,285	(14.1)
Other [§]	9,263	(8.8)	200	(0.2)	0	(0)	0	(0)
Total	105,733	(100)*	116,200	(100)*	102,611	(100)*	129,431	(100)*

[^]Includes outreach clinics.

[§] Includes prisons, fire departments, rehabilitation centers, churches, and other non-Los Angeles County Health agencies.

*Percentages may not add up to 100 due to rounding approximation.

Figure 1. Administration of influenza vaccine, by provider type and campaign year.

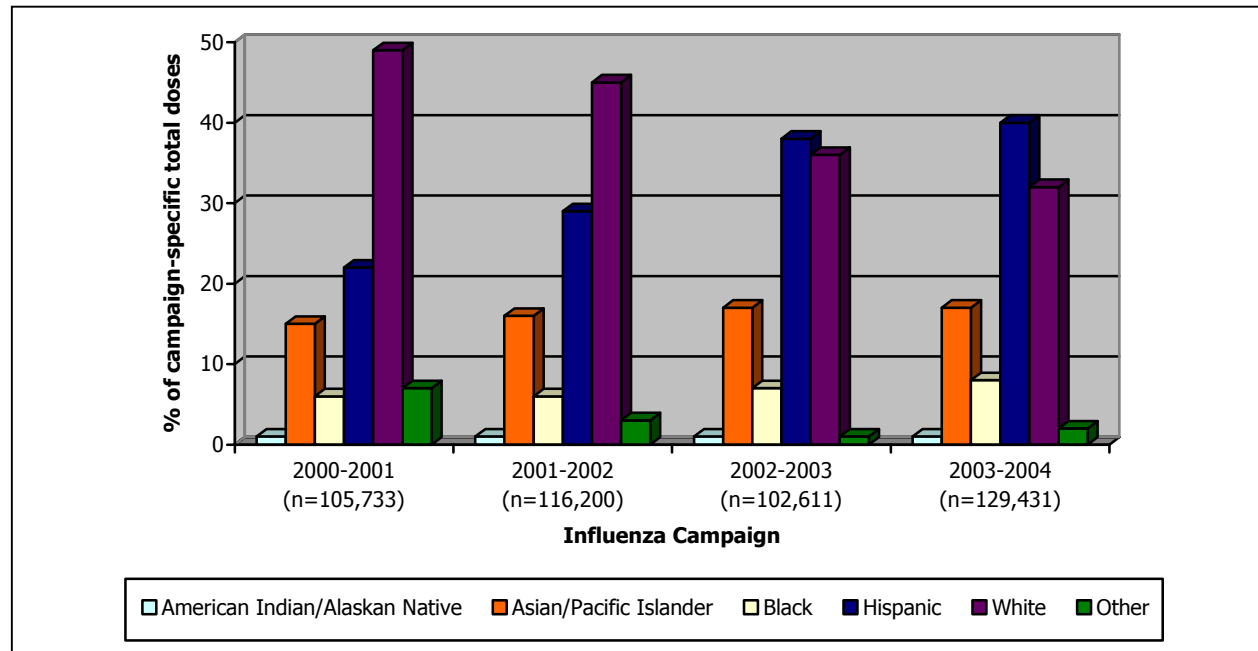


The 26% increase (26,820 doses) in total doses administered during the 2003-2004 Influenza Campaign, compared to the 2002-2003 Influenza Campaign, was primarily due to an increase in vaccine doses administered during Public Health clinics. However, Personal Health centers experienced the largest percent increase (64%) in the 2003-2004 Influenza Campaign, compared to the 2002-2003 Influenza Campaign. The increase in the amount of vaccine administered may have been due to increased media attention. The suggestion that the 2003-2004 influenza season was worse than past years may have motivated more people to obtain the vaccine.

In the past two campaigns, Public Health Clinics and Community Health Providers administered the largest proportion of the publicly funded influenza vaccine. The proportion of vaccine doses administered by Community Health Providers has been increasing slightly each campaign year.

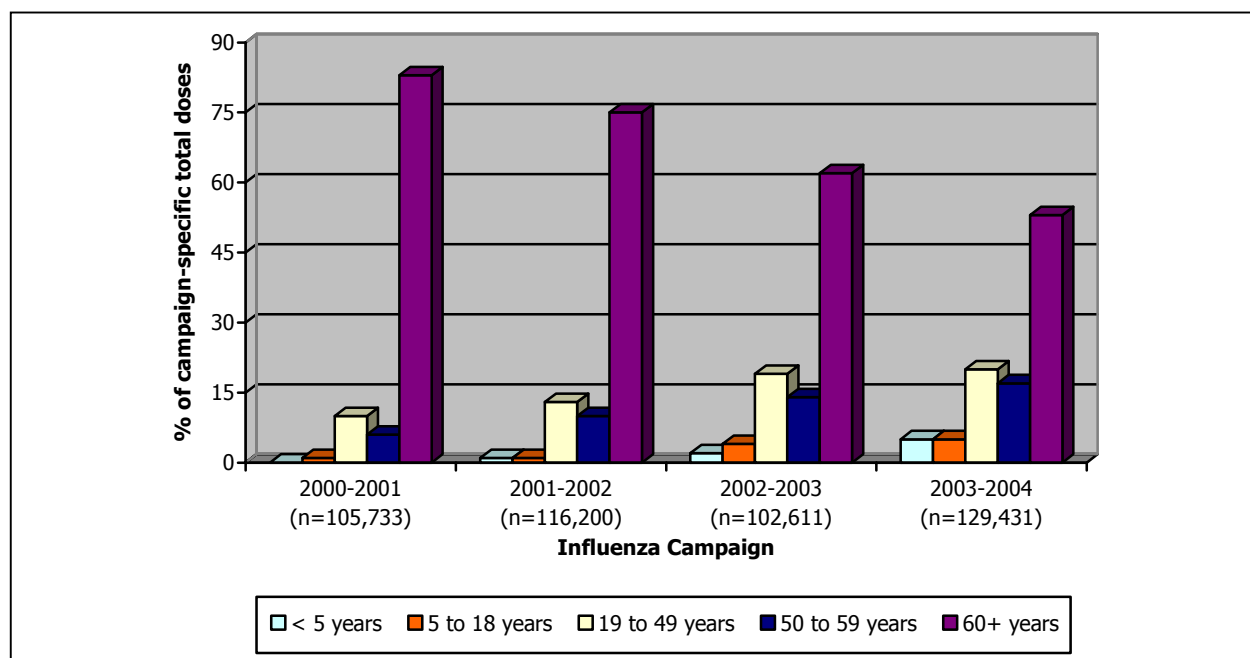
II. Vaccine Administration – Demographic Stratified Summary & Trends.

Figure 2. Ethnic distribution of persons receiving publicly funded influenza vaccine, by campaign year.



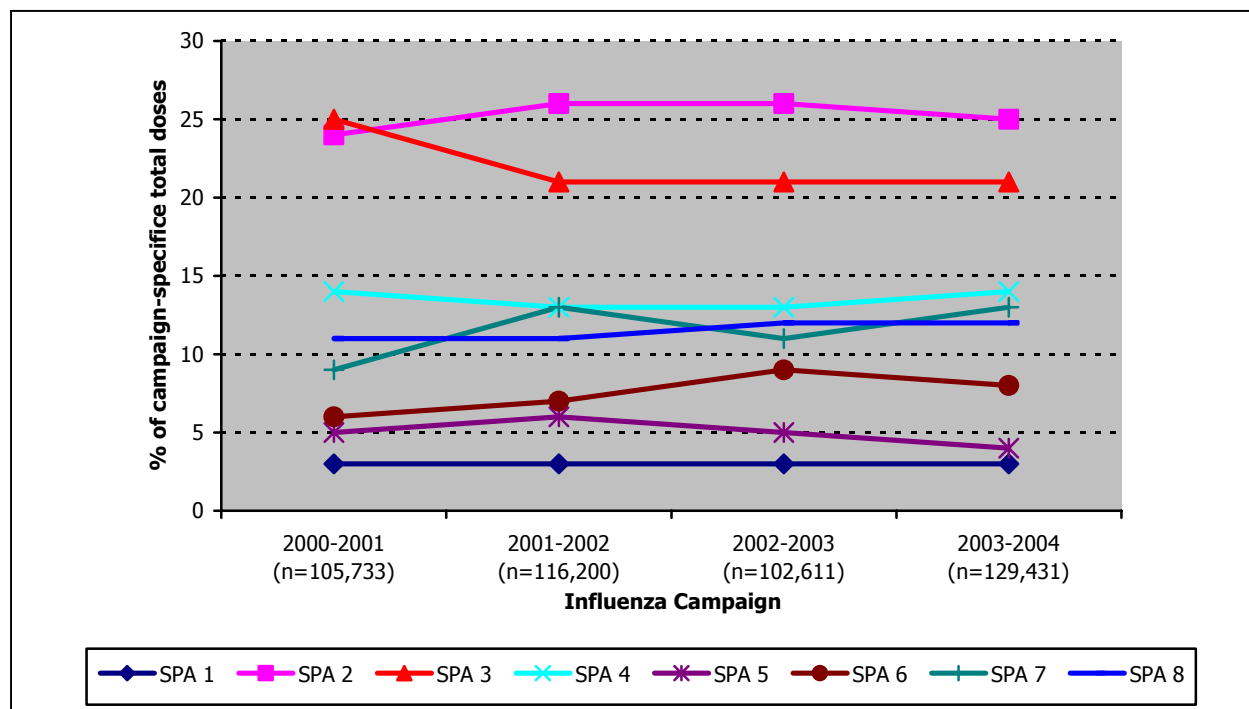
During the earlier two influenza campaigns, the largest proportion of the vaccine was administered to White clinic/outreach attendees (2000-2001: 51,613 doses [49%]; 2001-2002: 51,984 doses [45%]). During the 2002-2003 and 2003-2004 Campaigns, however, a larger proportion of the vaccine was administered to Hispanics (39,313 doses [38%] and 52,181 doses [40%], respectively), compared to Whites (37,270 doses [36%] and 41,039 doses [32%], respectively). Approximately the same proportions of influenza vaccine have been administered to Asian/Pacific Islanders (APIs) and Blacks in each campaign (15%-17%; 6%-8%, respectively).

Figure 3. Age distribution of persons receiving publicly funded influenza vaccine, by campaign year.



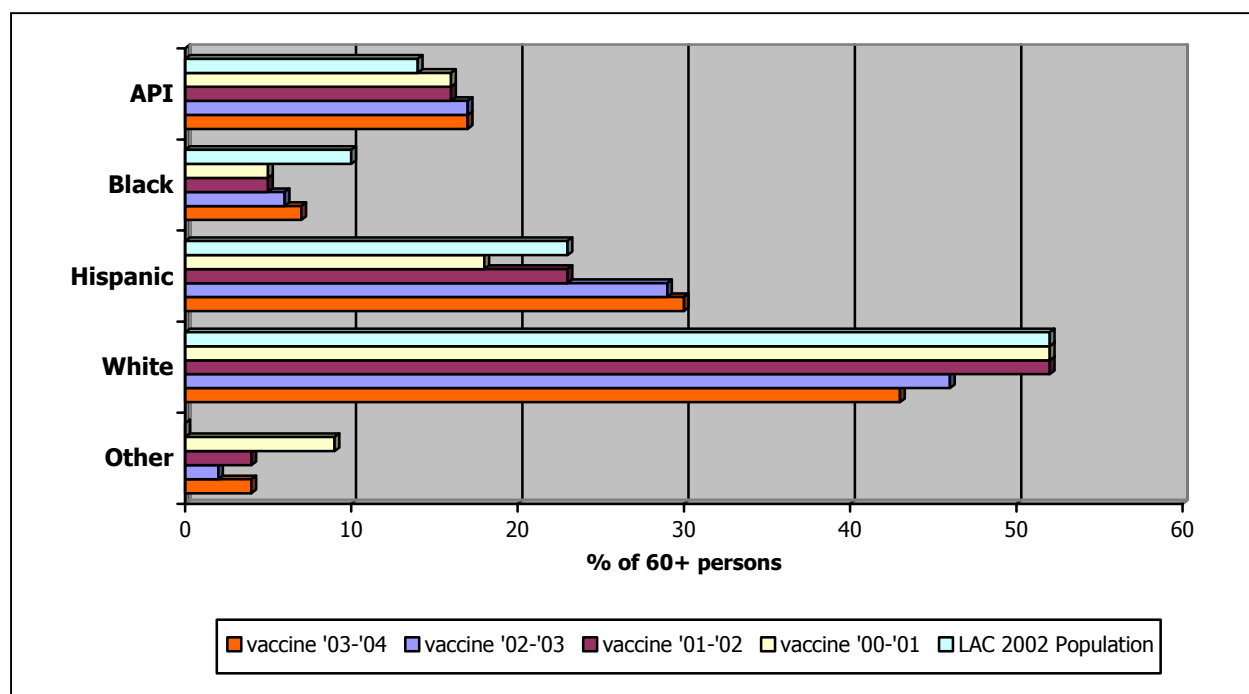
In all four campaigns, the majority of the vaccine was administered to persons 50 years of age and older, as recommended by ACIP. However, the proportion administered to persons 60 years of age and older has decreased each year, from 83% (87,515 doses) in the 2000-2001 Campaign to 53% (68,553 doses) in the 2003-2004 Campaign. The proportion of influenza vaccine administered to the 19 - 49 and 50 - 59 age groups has increased each campaign. The increase in the proportion of the influenza vaccine administered to persons under five years of age from 2% (1,950 doses) during the 2002-2003 Campaign to 5% (6,116 doses) during the 2003-2004 Campaign was most likely due to LAC-DHS and the ACIP encouraging the vaccination of children aged 6-23 months.

Figure 4. Proportion of total influenza vaccine administered in each SPA, by campaign year.



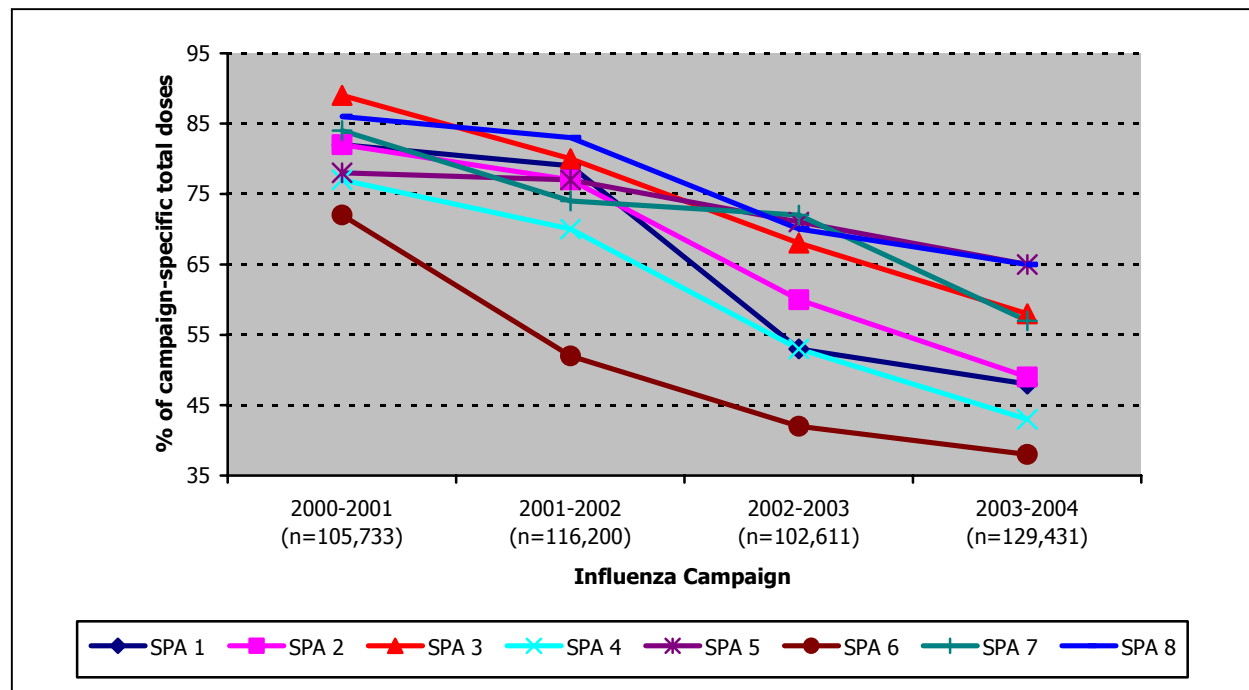
The amount of vaccine administered in each SPA is determined by the location of the provider administering the vaccine, not the residence of the vaccine recipients. For half of the SPAs (1, 2, 4, 8), their proportion of the total influenza vaccine administered has remained approximately the same for each campaign year. SPAs 3 and 7 experienced dramatic changes in their proportion of the total administered vaccine when comparing the 2000-2001 and 2001-2002 campaigns (25% to 21% and 9% to 13%, respectively). In previous campaigns, SPA 6 had been steadily increasing in the proportion of the total vaccine administered by its providers, but decreased slightly in the 2003-2004 Influenza Campaign. The proportion of the vaccine administered by SPA 5 providers has decreased steadily since the 2001-2002 Influenza Campaign.

Figure 5. Los Angeles County 60+ population and vaccine administered in persons 60 years and older, by race and campaign year.



For the 2000-2001 and 2001-2002 Campaigns, similar proportions of administered vaccine were evidenced for APIs, Blacks, and Whites in those persons 60 years of age and older. The proportion administered to Whites decreased to 46% during the 2002-2003 Campaign and to 43% during the 2003-2004 Campaign. Compared to the 2002-2003 Campaign, the proportion administered to APIs remained the same (17%) in the 2003-2004 Campaign. The proportion administered to Blacks increased to 7% during the 2003-2004 Campaign. The proportion of influenza vaccine administered to Hispanics has increased each campaign since the 2000-2001 Campaign. In the past two campaigns, the racial distribution of vaccine administered to persons 60 years of age and older differed slightly from the racial distribution of the 2002 LAC population.

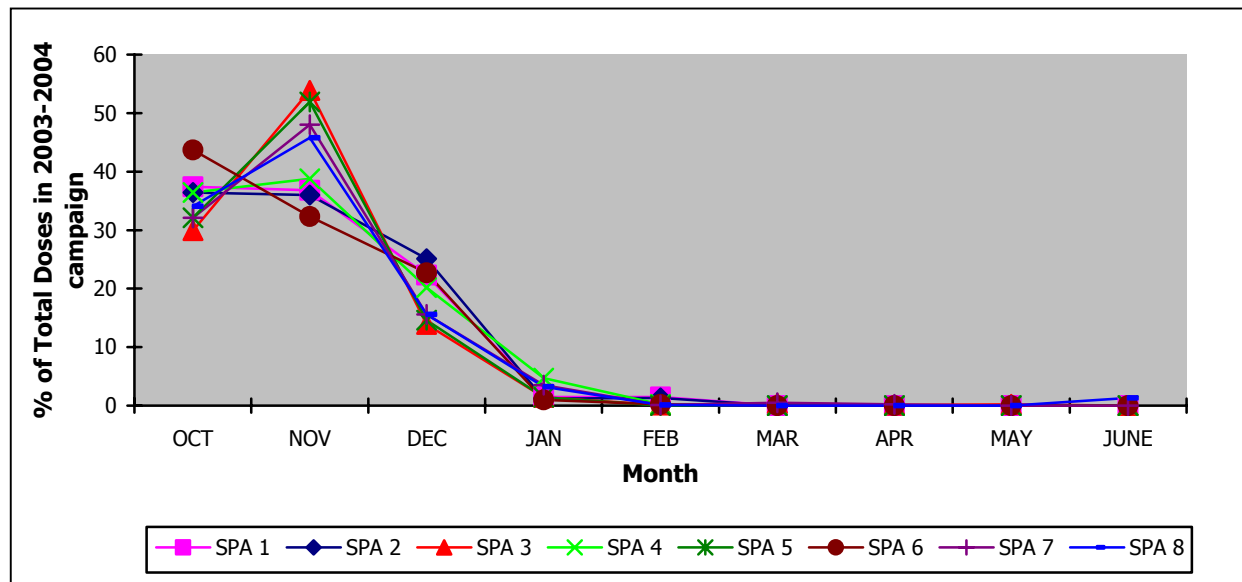
Figure 6. Percentage of total influenza vaccine administered to persons 60+ years, by SPA and campaign.



Within each SPA, the proportion of flu vaccine distributed to persons 60+ has decreased each successive campaign. The largest decrease during the 2003-2004 Campaign occurred in SPA 7 (72% [8,500 doses] in the 2002-2003 Campaign to 57% [11,547 doses] in the 2003-2004 Campaign).

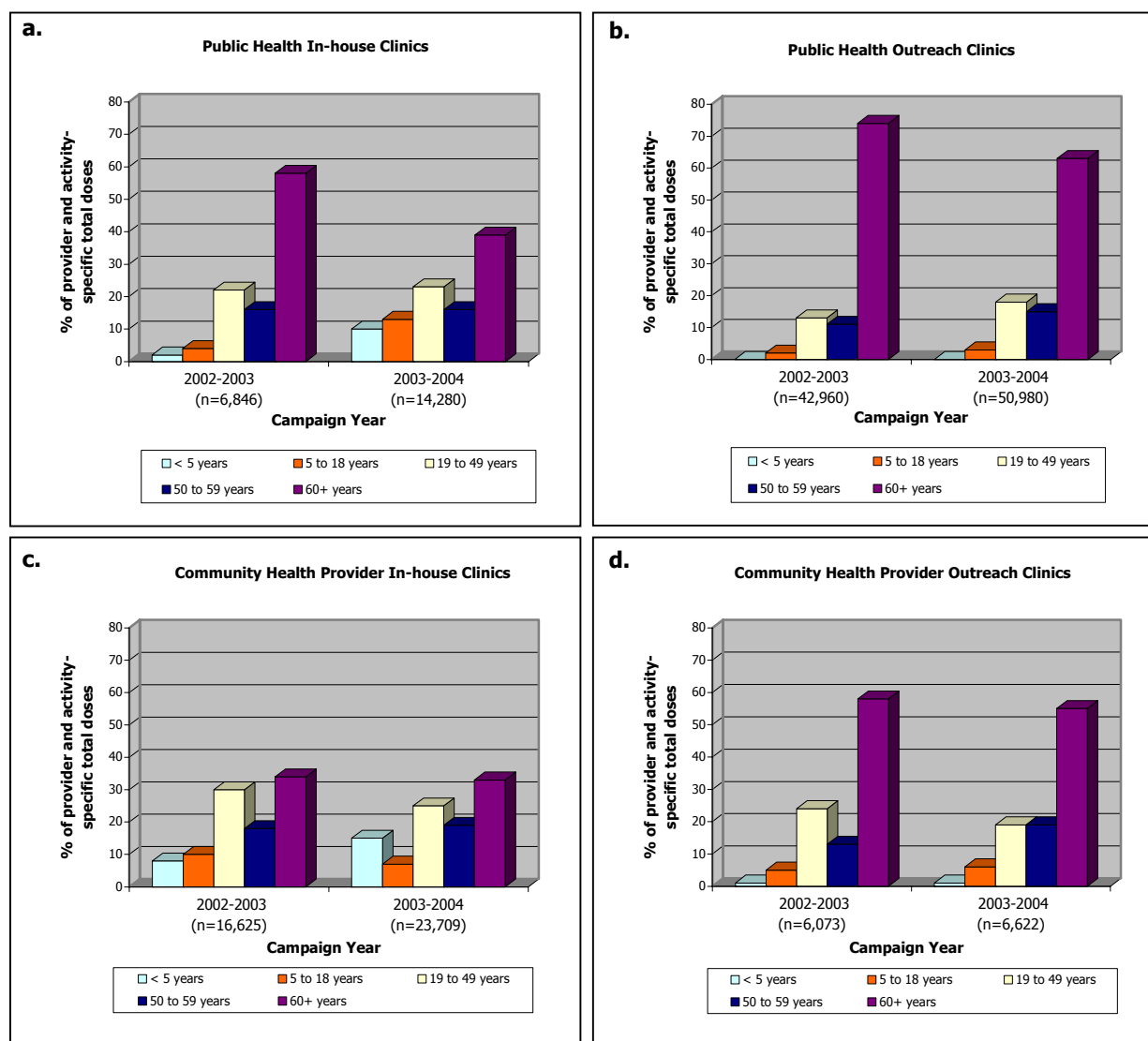
III. 2003-2004 Influenza Campaign Results

Figure 7. Influenza vaccine administration each month, by SPA.



During the 2003-2004 Campaign, half of the SPAs (3, 5, 7, 8) administered the largest proportion of vaccine doses in November. SPA 6 administered the largest proportion of their vaccine during October. All SPAs administered the majority of vaccine doses in October and November combined.

Figure 8. Age distribution of persons attending public health and community health providers, by outreach and in-house clinics.



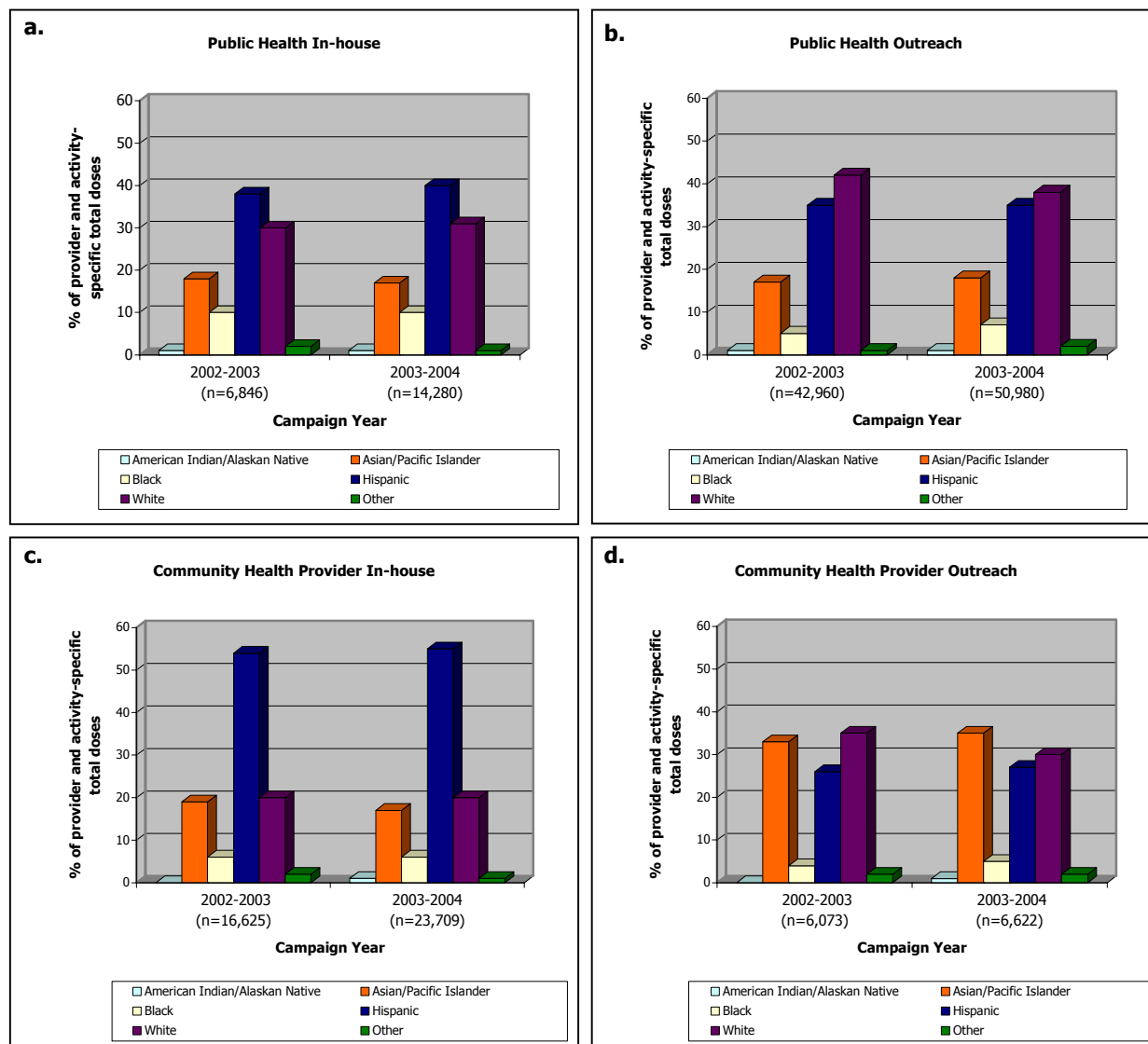
Outreach clinics administered 45% (57,602 doses) of the influenza vaccine provided during the 2003-2004 Campaign. Both Public Health outreach clinics (Figure 8b) and Community Health outreach clinics (Figure 8d) administered the largest proportion of their vaccine to persons 60 years of age or older (32,223 doses [63%] and 3,659 doses [55%], respectively).

When comparing the 2002-2003 and 2003-2004 Campaigns, the age distribution of persons receiving vaccine in Public Health in-house clinics (Figure 8a) and Public Health outreach clinics (Figure 8b) remained the same. There was a decrease in the proportion of vaccine administered to persons 60+ in both Public Health in-house and outreach clinics (to 38% and 63%, respectively) but an increase in the actual number of doses administered (5,518 doses and 32,223 doses, respectively). Public Health in-house clinics (Figure 8a) and Community Health in-house clinics (Figure 8c) increased the proportion administered to persons in the <5 years age group (1,786 doses [13%] and 3,563 doses [15%], respectively). In Public Health

in-house clinics experienced a four-fold increase (to 10% [1,460 doses]) in the proportion of doses administered to the <5 years age group and a 2.25-fold increase (to 13% [1,786 doses]) in the proportion of doses administered to the 5 to 18 years age group. The age distribution of persons receiving vaccine in Community Health in-house clinics (Figure 8c) and Community Health outreach clinics (Figure 8d) changed slightly from the 2002-2003 Campaign to the 2003-2004 Campaign.

During the 2003-2004 Campaign, the proportion of influenza vaccine administered in Community Health in-house clinics to persons <5 years (15% [3,563 doses]) surpassed the proportion administered to persons 5 to 18 years (7% [1,761 doses]). During Community Health outreach clinics, the proportion of vaccine administered to persons 19 to 49 years and persons 50 to 59 years was the same (19% [1,279 doses and 1,243 doses, respectively]).

Figure 9. Ethnic distribution of persons attending public health and community health providers, by outreach and in-house clinics.



Comparing the 2002-2003 and 2003-2004 Campaigns, the ethnic distribution within Public Health in-house, Public Health outreach, Community Health in-house, and Community Health outreach clinics did not change.

During the 2003-2004 Campaign, Hispanic vaccine recipients made up a much larger proportion of the population attending Community Health in-house clinics (55% [12,946 doses], Figure 9c) than the population attending Public Health in-house clinics (40% [5,710 doses], Figure 9a). However, the overall ethnic distribution of persons attending in-house clinics was similar for both Public Health and Community Health Providers. The ethnic distribution of persons attending Public Health outreach clinics (Figure 9b) was very different from the ethnic distribution of persons attending Community Health Provider outreach clinics (Figure 9d). Predominantly Whites and Hispanics attended Public Health outreaches (19,370 doses [38%] and 17,739 doses [35%], respectively), which was also the case in the Public Health in-house

clinics (4,380 doses [31%] and 5,710 doses [40%], respectively). The majority of persons attending outreach clinics conducted by Community Health Providers were API (2,317 doses [35%]) and White (1,970 doses [30%]).

Although Blacks received a smaller proportion of vaccine administered during Public Health outreaches compared to Public Health in-house clinics (7% and 10%, respectively), the actual number of doses administered to Blacks during outreach clinics was much larger than the number administered to Blacks during in-house clinics (3,332 doses vs. 1,447 doses).

Overall, Public Health Providers seemed to reach the same ethnic/racial groups in their outreaches as in their in-house clinics while Community Health Providers seemed to use their outreach clinics to target the ethnic/racial populations that do not attend their in-house clinics.

Discussion

Summary

- Public Health Outreach clinics administered the largest proportion of influenza vaccine to the LAC population over the last four campaigns.
- The decreasing trend in the proportion of influenza vaccine being administered to persons 60 years of age and older is consistent within each SPA.
- Community Health outreach clinics provide influenza vaccine to a population that has a different ethnic distribution than Public Health in-house and outreach clinics, as well as their own in-house clinics.
- Over the past four influenza seasons, the age and racial distributions of persons receiving publicly funded vaccine through the influenza campaign has been consistent within each clinic type. In each campaign, the majority of the influenza vaccine was administered to Whites and Hispanics and the smallest proportion to Blacks and American Indian/Alaskan Natives. Although this is partially due to the ethnic distribution in LAC, special efforts to reach the American Indian/Alaskan Native and Black communities are needed.

Limitations

- It is difficult to assess to what extent the annual influenza campaign reached its target population.
 - Age and race information is not maintained in the same manner at all clinic sites.
 - Information on chronic conditions is not currently collected. This makes it impossible to know whether the persons under 60 years of age receiving the vaccine actually have a chronic condition listed in the ACIP recommendations.
- Information on vaccine usage during the influenza campaigns cannot be used to determine influenza vaccine coverage levels for LAC.
 - Currently, there are no reliable means for determining how many seniors or persons with chronic conditions receive non-publicly funded influenza vaccine from their primary medical doctor.

References

¹ Centers for Disease Control and Prevention. *Prevention and Control of Influenza. Recommendations From the Advisory Committee on Immunization Practices (ACIP)*. MMWR 2003; 52(No. RR-8).

² Centers for Disease Control and Prevention. *Surveillance for Influenza - United States, 1994-95, 1995-96, and 1996-97 Seasons*. MMWR 2000; 49(No. SS-3): 13-28.